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Title: Suicide by crashing into a heavy vehicle: Professional drivers' views

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Conflict of interest declaration

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ABSTRACT

Objective: Every profession has its own safety and health risks. In addition to the risk of being involved in a “normal” road crash, professional heavy vehicle drivers are at risk of becoming victims of people attempting suicide by crashing into their vehicles. Road suicides are not that rare, at least not in Finland, where they represent about 12% of all fatal road crashes. The purpose of this study was to survey professional heavy vehicle drivers about their experiences, views and opinions regarding road suicides.

Methods: The sample included heavy vehicle drivers (N=863) randomly recruited from a transport workers' union.

Results: About 18% of the respondents reported a suspected suicide attempt of a motor vehicle driver crashing into their vehicle, with 15% of these (i.e., 2.8% of the whole sample) also reporting a resulting crash. More than half of the respondents reported personally knowing another professional driver who had experienced a crash caused by a suicidal driver. Almost 80% of the drivers reported being afraid that someone would attempt suicide by crashing into their vehicle; however, thinking about such a possibility produces a level of anxiety in less than half of all respondents. Most respondents agreed about the challenges of avoiding a crash if somebody deliberately drives their car towards their vehicle.

Conclusion: Heavy vehicle drivers perceive road suicides as an occupational risk in their profession. We discuss possible preventive measures against suicide attempts by crashing into a heavy vehicle.

Key words: Violent suicide, driver suicide, self-destruction, motor-vehicle crashes, survey, heavy vehicles or trucks

INTRODUCTION

Every profession has its own safety and health problems. Professional heavy vehicle drivers are particularly at risk of being involved in road crashes. Besides the risk of being involved in a “normal” crash, they face the risk of becoming victims of drivers (or other road users) attempting suicide by crashing into their vehicles.

On average, 28 fatal road crashes per year in Finland are the result of attempted deliberate self-destruction (Airaksinen et al. 2016), representing about 12% of all fatal road crashes. About 24 of these suicides involve a fatality in a motor vehicle representing about 11% of all motor vehicle fatal crashes and about four suicides per year involve pedestrians who throw themselves under a motor vehicle, representing about 13% of fatal crashes involving pedestrians (Airaksinen et al. 2016). The proportions of fatalities are somewhat lower as suicide crashes in almost all cases involve only one fatality (i.e., driver/pedestrian committing a suicide; Radun, Parkkari et al. 2019). Although some motor vehicle suicide crashes involve a single vehicle, most of them are crashes with another, typically heavy, vehicle (Radun, Parkkari et al. 2019; Hernetkoski et al. 2009).

It is widely accepted that the rates of road suicides are underreported (Pompili et al. 2012). According to some unofficial estimates in Finland, there might be about the same number of deliberate crashes that do not result in fatalities. This number of successful and unsuccessful road suicide attempts would be similar to the yearly number of railway suicides in Finland (Airaksinen et al. 2016; Silla, 2011). However, given that in Finland there are many fewer train drivers (about 1,300, personal communication Otso Ervasti, Chief Medical Officer at VR) than truck drivers (more than 110,000 professional drivers and many of them drive trucks), the objective and probably the perceived risk of experiencing suicide attempt is much higher for a train than for a heavy vehicle driver.

A simple calculation indicates that every train driver with a prospect of a 30-year-long career might expect to experience at least one under-the-train suicide. While train drivers are probably aware of the risks that somebody might jump in front of their train, it is unknown whether a much larger group of heavy vehicle drivers consider road traffic suicides as an occupational risk and whether they suffer stress from thinking that something like that might happen to them one day. What we know is that Finnish professional heavy vehicle drivers organize an annual event (*Yksikin on liikaa* – Even one is too much), a one-minute stop in traffic, aimed at increasing awareness about professional drivers who are involved in fatal crashes as “the other party.”

The aim of this study was to survey professional heavy vehicle drivers about their experiences, views and opinions regarding road traffic suicides.

METHODS

Data were collected in cooperation with a transport workers' union with more than 50,000 transport professionals. According to the organization records, about 15,000 of its members were working as heavy vehicle drivers at the time. About 8,000 of these drivers provided the organization with their email address and almost half of them were randomly selected and invited to participate in our study. The organization's representative sent an email

(and one reminder), which included a short description of the study written by the authors and a link to an online survey. After a reminder, 863 drivers responded to the survey, yielding a response rate of about 22%.

The questionnaire included questions about background factors (age, sex, weight, height, and driving exposure), possible previous experience with drivers attempting suicide by crashing into their vehicles, views about road suicide and their prevention, and several scales including the Perceived Stress Scale (PSS; Cohen et al. 1983) and the Generalized Anxiety Disorder scale (GAD; Spitzer et al. 2006). In addition to structured questions and various scales, the questionnaire allowed the respondents to add their own comments in connection with some of the questions.

From this extensive questionnaire, only one scenario question regarding the willingness to ditch a vehicle in an attempt to save the oncoming driver has been analyzed and reported (Radun, Radun et al. 2019). This sub-study had a clear hypothesis (willingness to ditch a vehicle in an attempt to save the oncoming driver would be positively related to the empathy score and more present for the hypothetical driver who fell asleep than for the driver who apparently deliberately diverted his car). In addition to collecting information about heavy vehicle drivers' experiences, views and opinions regarding road traffic suicides, we were interested in assessing whether drivers might experience stress and anxiety professionally because of fear of becoming a victim of a suicidal driver; however, no specific hypotheses were formulated in this respect.

About 9% of respondents were unemployed, or were on sick or parental leave, or had been mostly driving buses, passenger cars, or vehicles with a maximum allowed mass up to 3500 kilograms during the past three months. However, none of them was excluded from the analysis as most of the questions in the survey were concerned with life time experiences and attitudes and opinions about general traffic safety related issues. The only exceptions were analyses (Table S1) regarding two questions: "Are you afraid that someone will try to commit suicide by crashing into your vehicle?" and "Does thinking about this make you anxious?" as they are related to possible future events. Because responses were on an ordinal scale (range from 0-not at all to 5-extremely), we ran ordinal logistic regression models. Almost 3% of the respondents did not report their gender, and of those who did, only 6.4% were women.

The study protocol was approved by the University of Helsinki's Ethical Review Board in Humanities and Social and Behavioral Sciences (statement 36/2016).

Results

Own experience with suicidal drivers

Out of 863 respondents, 157 (18.2%; 10 missing values) positively answered the question "Have you ever experienced suicide attempt against your heavy vehicle or suspected that was the case." To the associated question "Are you sure it was a suicide attempt and not the driver's bad judgment or reckless driving or some other reason?", 70 out of these 157 (44.6%; 1 missing value) answered "I am absolutely sure" and 86 (54.8%) answered "I suspect, but I am not fully sure." A crash was reported in 24 cases (15.3%; 3 missing values) and 3 of the respondents suffered minor injuries. Regarding the other driver, 17 died, 3 sustained minor injuries, 3 were not injured and in one case, the outcome was unknown to the respondent.

Knowing another professional driver involved in a crash caused by a suicidal driver

More than half (N=449, 52%; 20 missing values) of the respondents reported knowing another professional driver who was involved in a crash caused by a driver attempting suicide with 242 knowing more than one such driver. When asked about the source of information concerning such crash, 80.5% reported hearing directly from the driver involved, 24.3% heard from a colleague/friend, 22.5% from a police investigation, 9.1% heard from the media and 2% from other sources. Most of them reported one source of information (69.5%; 0.7% missing value). Regarding the consequences, 90% of respondents reported the death of a suicidal driver. Three (0.7%) respondents reported that a professional driver died, 2.9% were severely injured, and 21.2% slightly injured (0.9% missing value). When excluding the three dead drivers and the four drivers with no reported injury outcome, the respondents reported that in 70 out of 442 (15.8%) cases, a driver stopped driving a heavy vehicle because of the crash with an additional 146 (33%) having difficulties in returning to work.

Altogether, 57.1% of the participants had either experienced a suicide attempt against their vehicle and/or reported knowing another professional driver who was involved in a crash caused by a driver attempting suicide.

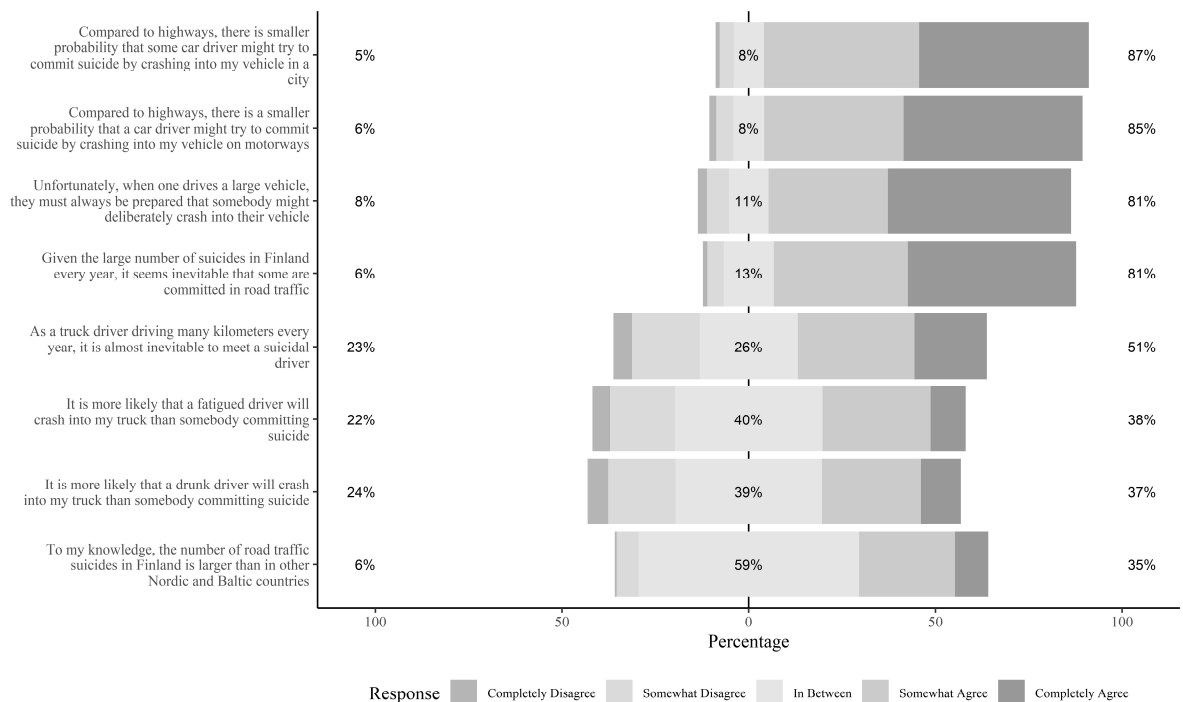


Fig 1A. Distribution of responses to statements regarding the probability of experiencing a suicide attempt by crashing into their vehicles

Self-reported fear and anxiety about experiencing a suicide committed by crashing into their vehicle

Table 1 depicts the extent of fear and anxiety regarding the possibility that someone might try to commit suicide by crashing into our respondents' vehicles. Table S1 (see supplement) contains parameter estimates for the ordinal regression models run in order to explain fear and anxiety. The results of the ordinal regression analysis indicate that

fear of becoming a victim of a suicidal driver is positively related to yearly mileage (OR=1.22, 95% CI: 1.09–1.37), PSS (OR=1.06, CI: 1.03–1.10) and GAD (OR=1.06, CI: 1.003–1.13) scores. The fear is more common also among women (OR=1.84, CI: 1.02–3.34) and those who had experience with suicidal drivers (OR=1.59, CI: 1.10–2.31) and personally knowing a heavy vehicle driver who was the victim of a suicidal driver (OR=1.40, CI: 1.04–1.90). For the anxiety model, only PSS (OR=1.05, CI: 1.01–1.09) and GAD (OR=1.15, CI: 1.08–1.22) were significant predictors.

Table 1. Self-reported fear and anxiety in total and restricted sample

	Are you afraid that someone will try to commit suicide by crashing into your vehicle?		Does thinking about this make you anxious?	
	All sample	Restricted sample*	All sample	Restricted sample*
Not at all	184 (21.9%)	165 (21.6%)	444 (53.2%)	399 (52.6%)
Somewhat	429 (51.1%)	387 (50.7%)	310 (37.2%)	285 (36.4%)
Moderately	155 (18.5%)	147 (19.3%)	54 (6.5%)	50 (6.6%)
Quite a lot	52 (6.2%)	47 (6.2%)	19 (2.3%)	18 (2.4%)
Extremely	19 (2.3%)	17 (2.2%)	7 (0.8%)	6 (0.8%)
Total	839 (100%)	763 (100%)	834 (100%)	758 (100%)

* Does not contain those who were unemployed, or were on sick or parental leave, or had been mostly driving buses, passenger cars, or vehicles with the maximum allowed mass up to 3500 kilograms during the past three months.

Comments about the survey

At the end of the survey, the participants had an opportunity to write any comment about the survey and its topic with 101 (12.7%) responding. Only a few remarked that some of the questions were difficult to answer while 68 explicitly wrote that the survey was good and/or that the topic is of great importance (see some examples in the supplementary materials).

DISCUSSION

To the best of our knowledge, this is the first large survey study about heavy vehicle drivers' experiences, views and opinions regarding suicide attempts by crashing into a heavy vehicle. The issue seems important to many Finnish truck drivers as indicated by their positive feedback about the topic and the survey itself.

Interestingly, almost a fifth of respondents reported a suspected suicide attempt by someone trying to crash into their vehicle. Naturally, as with any other survey study, a self-selection bias may have played a role here. However, even if none of those who did not respond to the survey experienced a suspected suicide attempt by trying to crash into their

vehicle, the overall proportion would be around 4%. About 15% out of the drivers reporting experiencing a suicide attempt also reported a resulting crash. This crash rate seems low considering the difficulties heavy vehicle drivers report in avoiding such deliberate crashes (Radun, Parkkari et al. 2019) and should be interpreted with caution. However, due to a paucity of relevant data, we cannot definitively know the accuracy of the responses. More than half of the respondents reported personally knowing another professional driver who had been the second party in a crash caused by a driver attempting suicide. Although it is possible that some respondents were referring to same driver(s), this further illustrates the scope of the problem among heavy vehicle drivers given the fact that our respondents do not come from a small compact group of people, but instead represent thousands of heavy vehicle drivers who operate in Finland.

Almost 80% of drivers reported being afraid that someone would try to commit suicide by crashing into their vehicle (Table 1). This is further evidence that heavy vehicle drivers perceive road suicides as an occupational risk in their profession. Thinking about such a possibility produces anxiety in almost half of them. Fear of becoming a victim of a suicidal driver is related to all factors except age and lifetime mileage. On the other hand, for the anxiety model, only PSS and GAD were significant predictors. It makes sense that previous experience with suicidal drivers, personally knowing a heavy vehicle driver who was the victim of a suicidal driver, yearly mileage and sex are all connected to the fear or the perceived probability that one day someone might try to commit suicide by crashing into their vehicle. On the other hand, this specific anxiety is related only to more stable constructs measured with PSS and GAD. PSS items measure “how unpredictable, uncontrollable, and overloaded respondents find their lives” while GAD items measure whether respondents suffer from general anxiety and worry too much about everyday life events. The low explained variance in both models indicates that fear of suicidal drivers and associated anxiety cannot solely be explained by yearly mileage and previous experience and cannot be reduced to general perceived stress and anxiety. Our interpretation is that this further indicates that road suicides are indeed recognized as an occupation hazard by heavy vehicle drivers rather than as a reflection of personal experiences, and general stress and anxiety to this very specific situation of someone deliberately crashing into their vehicles.

More than 80% of respondents agreed that given the number of suicides in Finland, it seems inevitable that some of them are committed in road traffic (Figure 1). About half of respondents believe that if one drives many kilometers every year, meeting a suicidal driver is inevitable (Figure 1). This does not necessarily mean crashing with a suicidal driver, but it rather indicates they believe that there is always a potential danger as 80% also agreed that those driving a heavy vehicle must always be prepared for somebody to drive under their vehicle deliberately. The probability of becoming a victim of a suicidal driver crashing into their vehicle was judged to be lower in a city than on highways, and on motorways compared to highways (Figure 1). Our analysis of 138 suicides committed by crashing into a heavy vehicle in Finland during 2011-2016 showed that only two cases involved driving in the wrong direction on a motorway (Radun, Parkkari et al. 2019).

The participants were divided regarding the probability of becoming a victim of a suicidal driver compared to the probability of a drunk or fatigued driver crashing into their vehicle, (with a large proportion of those who had chosen ‘in between’) (Figure 1). This is not surprising because up to 15% of fatal motor vehicle crashes in Finland are attributed to driver fatigue (Radun 2009) while the proportion of crashes related to alcohol has been around 25% for many years

(Radun et al. 2014). Although we do not know whether our participants were aware of these proportions, our results nevertheless show that the perceived threat from suicidal drivers is not regarded as being very different from the threat posed to our respondents by fatigued and drunk drivers.

More than 80% of respondents think that medical doctors aware of a driver's suicidal thoughts should always recommend to the police that they suspend their driving license (Figure S1). Since 2004, Finnish traffic law states that medical doctors are obliged to notify the police if the patient's fitness to drive has been compromised in such a way that they could be a threat to themselves or others while driving. This addition to the traffic law was adopted despite the reservation expressed by the Finland's doctors' union. Patient-doctor relations and the confidentiality of patients' information were the main reasons for the concern before the law was adopted and also in the years that followed (Peräaho et al. 2012). There are many challenges in applying this law. In 2016, the Finnish Transport Safety Agency (Trafi; now called Finnish Transport and Communications Agency – Traficom) issued a guideline for assessing drivers' fitness to drive. It also includes the recommendation to revoke a driving license if "A person has a significant and immediate risk of suicide." It specifies the suicide risk in connection with psychiatric disorders (see supplementary materials):

We are unaware of studies examining the effects of this addition to the traffic law. Some might argue that it has not been effective considering the yearly number of fatal road suicides (Airaksinen et al. 2016; Radun, Parkkari et al. 2019); however, such conclusion might be too simplistic. Whether the new guidelines will have any effect is also yet to be seen.

Our respondents were divided regarding the question whether family members aware of suicidal thoughts are the only ones who could prevent a suicidal person from driving a vehicle (Figure S1). However, our respondents might not be appropriately qualified to assess these factors. Furthermore, this is perhaps an unfair question as it might appear that it assigns a responsibility to those close to a person who committed suicide by crashing into a heavy vehicle. Nevertheless, "could I have done more" is an issue that bothers family members (WHO 2014) as well as professionals, such as social workers (Sanders et al. 2005), psychotherapists (Fox and Cooper 1998), psychiatrists (Gitlin 1999) and psychiatry trainees (Sack et al. 1997) working with suicidal patients.

Given the relatively high number of road suicides in Finland and the fact Finnish Transport and Communications Agency recommends revoking the driving license for those with serious suicide considerations and recent attempts, it seems of utmost importance, if possible, to prevent your loved ones from driving if you believe they might be in immediate danger of committing suicide. Should taking car keys away from a suicidal person be one of the actions that are explicitly recommended along with standard measures such as "ask them to give you any weapons they have" or "remove sharp objects or anything else they could use to hurt themselves"?

Suicides committed by using a motor vehicle represent only a small proportion (2%-4%) of all suicides in Finland (Statistic Finland, 2019); therefore, it could be argued that mentioning the crashing of a motor vehicle as a possible suicide method might even be counterproductive given their availability and the well-known copycat problem (Niederkrotenthaler 2010). We are unaware of any study reporting how many of Finns with suicidal ideation consider a motor vehicle as a possible means of committing suicide. An Australian study showed that 15% of people who planned

suicide “reported planning or making arrangements to suicide by crashing a motor vehicle” (Murray and de Leo 2007, p. 245).

A few years ago, a senior police inspector received wide media attention when he pointed out in his blog that suicide by crashing into a heavy vehicle is a criminal activity. However, as we previously wrote, “it is likely that those who commit suicide by crashing into a heavy vehicle are aware of the potential danger they might pose to heavy vehicle drivers and other possible participants” (Radun, Parkkari et al. 2019). In one of the suicide cases investigated by OTI teams, a person who committed suicide by crashing into a heavy vehicle asked for forgiveness from the driver in a suicide note. It seems unlikely that stressing the criminal nature of this method would prevent suicide attempts using this method.

On the other hand, more than 80% of our respondents believe the media should recognize that truck drivers are victims in suicide attempts by somebody crashing into their vehicles (Figure S1). About 65% of respondents agreed that there should be more discussion in the media about suicide committed by crashing by heavy vehicles (Figure S1). How the media report about suicides is a sensitive issue. There are several guidelines such as the ‘Suicide Prevention Toolkit for Media Professionals’ (Duman and Portzky 2014) produced within the EU-funded Euregenas (European regions enforcing action against suicide) project. It is unlikely that a media release by police at least in Finland, would explicitly indicate the suicidal nature of a given crash. Typically, they use the phrase, “the car drifted for an unknown reason” (In Finnish: “auto ajautui tuntemattomasta syystä”). Such neutral reporting without stressing the fact that truck drivers are victims in such crashes might be perceived as (another) sign of a negative portrayal of truck drivers in the media and popular culture (“Trucking industry in popular culture (United States),” n.d.). As one of the respondents wrote: “Good survey, I’ve been waiting for someone to take up this topic as it seems truck drivers are demonized in the media. Thank you.”

When it comes to preventive measures in order to avoid crashing with a suicidal driver, our respondents were pessimistic. More than 90% believed that it is practically impossible to predict or avoid a deliberate crash (Figure S2). Driving experience and attentiveness while driving do not help, according to our respondents (Figure S2). In our previous studies using OTI’s investigation reports of 138 fatal suicides committed by crashing into a heavy vehicle, 75% of truck drivers reported that “the other vehicle diverted abruptly towards them, leaving almost half of them with no time for any reaction” (Radun, Radun et al. 2019).

The roads in Finland are generally of a standard width and cannot be considered to be narrow; however, due to its geographical position and climate, ditches are built among main and other roads. Going off road in order to avoid crashing with a smaller passenger car might be even more dangerous for a truck driver due to the risk of rolling over in a ditch. Therefore, it is not surprising that more than 90% of our respondents find the road environment as a possible obstacle to avoiding a crash with a suicidal driver (Figure S2). We should mention here that our respondents were more likely to report they would “ditch their vehicle in order to save the hypothetical driver who fell asleep than to save the driver who deliberately diverted their car towards the participant’s heavy vehicle” (Radun, Radun et al. 2019). Building a more forgiving environment (i.e., clear zones close to the road) is often proposed in connection with fatigued drivers who would then have “time to correct an error before colliding with an object” (Kenny 1995, p.94) rather than in connection with drivers who have to steer away from a fatigued, drunk, distracted, or suicidal driver who is heading towards them.

Given that most suicide crashes are head-on collisions (Hernetkoski et al. 2009; Radun, Parkkari et al. 2019), central (median) barriers might be an effective countermeasure against this type of suicide attempt. About 80% of our respondents agreed with this (Figure S2). It is unlikely that building a central barrier would be justified only with the reference to road suicide prevention; however, central barriers are supposed to reduce all types of head-on and overtaking crashes. This environmental intervention is an essential part of the Swedish Vision Zero program and has a positive effect on traffic safety (Botteghi et al. 2017). Frontal airbags are effective in reducing injuries in a case of a crash (Johannsen 2018). However, their effectiveness naturally depends on the impact forces in a given crash; they do not provide absolute protection. Therefore, it is not surprising that our respondents do not believe that fewer suicides would be committed in traffic if all vehicles were equipped with airbags (Figure S2). We have not asked our participants whether other technical solutions such as an automatic braking system and speed limiter devices would be in their view helpful in preventing deliberate crashes if installed in all vehicles. Perhaps, as the automation of vehicles continues, committing suicides by crashing into another vehicle will become more difficult.

Limitations

This study has several limitations. There is a possible response bias, which is typical for survey studies. The response rate of about 22% can be considered low; however, the exact proportion is probably larger as we were unable to check whether the information regarding the type of job their members had at the time was up to date. Some of the questions were suggestive possibly creating a demanding situation for the participants. Furthermore, it should be remembered that this study is based on heavy vehicle drivers' responses and no objective data was used to verify whether they indeed experienced a suicide attempt and possible resulting crash.

Conclusion

Despite some limitations, we conclude that heavy vehicle drivers in Finland recognize suicide by crashing into a heavy vehicle as an occupational risk. Many are afraid that a suicidal driver might attempt to die by crashing into their vehicle. If such an attempt does occur, nothing much can be done to prevent a crash. This is the view of the respondents to this study as well as to most of the 138 heavy vehicle drivers who were victims of in verified suicides by crashing into their vehicle (Radun, Parkkari et al. 2019). The laws of physics also agree.

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SUPPLEMENTARY MATERIAL

Table S1. Parameter estimates for the ordinal regression models.

		Are you afraid that someone will try to commit suicide by crashing into your vehicle? (N=686)			Does thinking of this make you anxious? (N=683)		
	Summary	B	SE(B)	p-value	B	SE(B)	p-value
Intercepts							
Y=1		-1.295	0.475	0.006	0.356	0.492	0.470
Y=2		1.155	0.475	0.015	2.745	0.508	<0.001
Y=3		2.720	0.488	<0.001	3.917	0.537	<0.001
Y=4		4.201	0.537	<0.001	5.326	0.642	<0.001
Age	M=40.9; SD=11.6	0.005	0.009	0.605	0.005	0.009	0.588
PSS	M=10.2; SD=5.5	0.061	0.018	0.001	0.045	0.019	0.017
GAD	M=2.8; SD=3.3	0.062	0.030	0.039	0.137	0.031	<0.001
Mileage: 12mo		0.200	0.057	<0.001	-0.008	0.060	0.887
Mileage: Lifetime		-0.105	0.075	0.159	-0.052	0.078	0.503
Sex, male	93.4%	-0.610	0.303	0.044	-0.345	0.312	0.269
Suicide victim, yes	18.3%	0.465	0.190	0.015	0.183	0.199	0.360
Other Suicide, yes	54.4%	0.339	0.155	0.029	0.022	0.164	0.891

Both models indicate an improvement compared to a baseline (Intercept only) model (Fear: -2 Log Likelihood=1637.463, Chi-Square=82.234, df=8, p<0.001; Anxiety: -2 Log Likelihood=1298.651, Chi-Square=82.597, df=8, p<0.001). Tests of Parallel Lines were not statistically significant (Fear: -2 Log Likelihood=1623.220, Chi-Square=14.243, df=24, p=.941; Anxiety: -2 Log Likelihood=1276.473, Chi-Square=22.178, df=24, p=.569) which supports the assumption of proportional odds. According to the Nagelkerke R-Square, the explained variance for fear is 12.3% and 13.1% for the anxiety model.

Some of the participants' comments about the survey.

“Very good and timely survey;” “Very good survey and necessary!”; “Good this topic is being investigated”; “Good, this is an issue that gets too little attention”; “Thanks to you, you do a very valuable and valued work for our professional drivers! These topics should also be highlighted in the professional training courses organized by companies”; “Finally somebody is taking a stand on this issue”; “It's a good thing that somebody even thinks about truck drivers and their well-being.”

A guideline for assessing drivers' fitness to drive (The Finnish Transport Safety Agency – Trafi; now called Finnish Transport and Communications Agency Traficom).

The risk of suicide associated with psychiatric or other illnesses is always assessed individually. Serious suicide considerations give rise to a 3-6 month ban on driving rights. This ban is issued by a doctor and it is not reported to the police. For patients who have planned to commit suicide using a vehicle or who have attempted a suicide using a vehicle, the driving ban is 6 to 12 months. This ban is reported to the police. Generally, it can be stated that a driving license can be returned when the psychiatric disorder is substantially alleviated, serious self-destructive thoughts have come to past and the person has abandoned suicide plans.

Trafi – Finnish Transport Safety Agency (2018). Ajoterveyden arviointiohjeet lääkäreille [Driver health guidelines for physicians]. Available at: <https://www.traficom.fi/en/transport/tieliikenne/driver-health-guidelines-physicians>

Fig S1. Distribution of responses to statements regarding societal and environmental preventive measures and media coverage

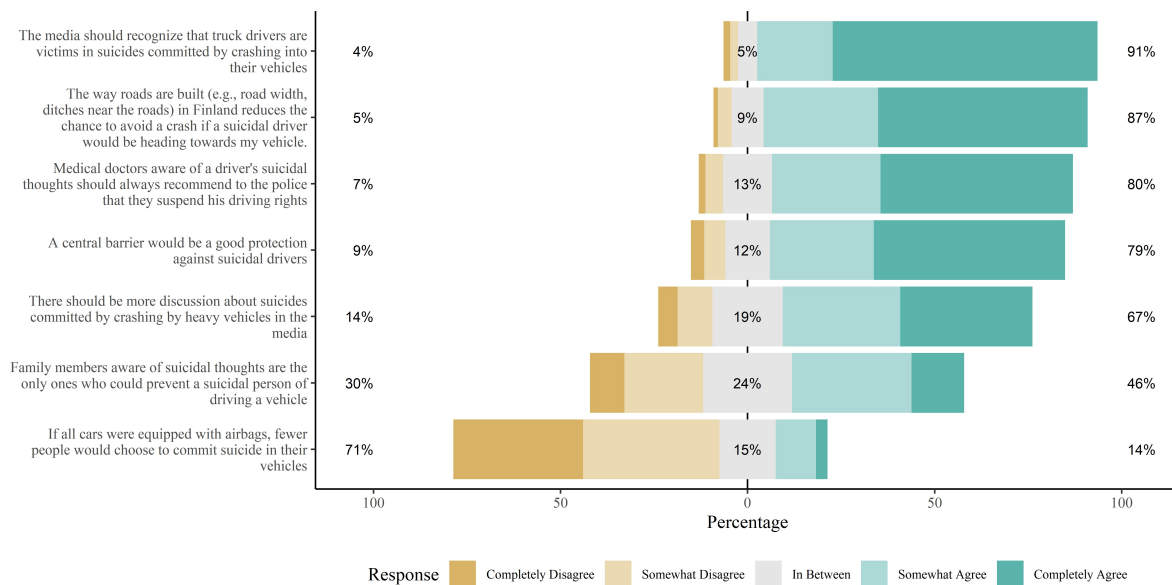
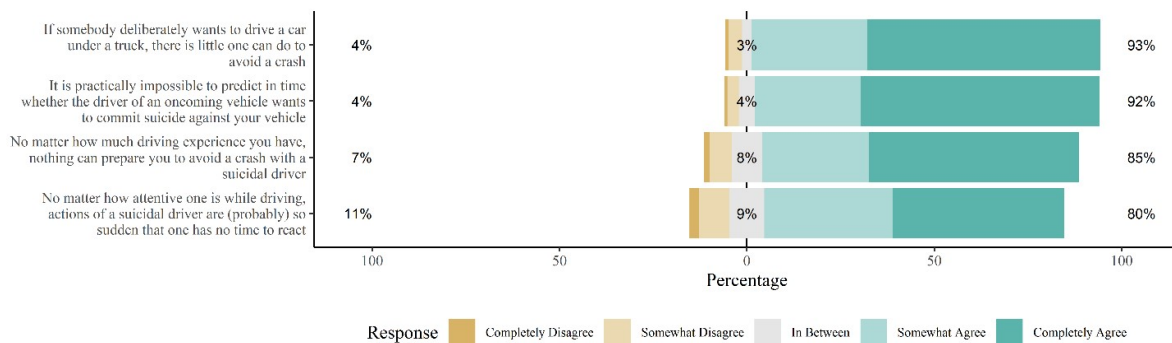


Fig S2. Distribution of responses to statements regarding own preventive measures



The figures were produced using R package 'likert'

Jason Bryer and Kimberly Speerschneider (2016). likert: Analysis and Visualization Likert Items. R package version 1.3.5. <https://CRAN.R-project.org/package=likert>